

AMENDMENTS TO THE DRAWINGS

FIG. 1 in the attached Replacement Sheet shows the originally filed FIG. 1, but with the amendments: (1) deletion of α and $\alpha - 1$; and (2) addition of reference number 180 and leading line from the box labeled "Gain Lookup".

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REMARKS

The drawings are objected to as failing to comply with 37 CFR § 1.84(p)(5).

The drawings are objected to under 37 CFR § 1.83(a).

Claims 1-20 are pending in the present application.

Claims 1, 14 and 18 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,591,234 of Chandran et al ("Chandran").

Claims 1, 14 are rejected under 35 U.S.C. § 102(b) as being anticipated by IEEE Int. Symposium on Circuits and Systems 1993, ISCAS'93, 3-6 May 1993; pages 455-458, Vol.I of Heitkamper et al ("Heitkamper").

Claims 1-4, 14 and 18 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 20050004796 of Trump et al ("Trump").

Claims 5-6, 16, 19-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Trump as applied to Claim 1, and further in view of U.S. Patent No. 5,524,148 of Allen et al ("Allen").

Claim 17 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Trump as applied to Claim 14, and further in view of U.S. Patent Application No. 20040101038 of Etter ("Etter").

Claims 7-13 are indicated allowable.

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 21-31 are added by this Amendment.

The drawings are objected to as failing to comply with 37 CFR § 1.84(p)(5). Specifically, the Examiner states that:

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 1 shows reference characters: (i) α and (1- α) and (ii) gain lookup. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference characters in the description in compliance with 37 CFR 1.121(b) are

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required in reply to the Office action to avoid abandonment of the application.

The above reference is from the Office Action mailed on July 17, 2006, p. 2. FIG. 1 and paragraph [0016] have been amended. No new matter was added.

The drawings are objected to under 37 CFR § 1.83(a). Specifically, the Examiner states that:

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Claim 19 recites the limitation " wherein the filter comprises an adder that adds high frequency energy to the downlink signal" in lines 1-2. The "adder" is not shown. A similar thing holds for claims 6 and 13. Further, claim 20 recites the limitation " wherein the filter comprises a subtractor that subtracts low frequency energy to the downlink signal" in lines 1-2. The "subtractor" is not shown. A similar thing holds for claims 5 and 12. Therefore, the adder/subtractor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The above reference is from the Office Action mailed on July 17, 2006, pp. 2-3. Claims 19, 6, 13, 20, 5, and 12 have been canceled. In view of this amendment, this objection by the Examiner is now moot.

Claims 1, 14 and 18 are rejected under 35 U.S.C. § 102(e) as being anticipated by Chandran.

Specifically, the Examiner states that:

Regarding claim 1, Chandran et al teach a method for improving a downlink signal received by a listener on a phone shown in Fig. 3, comprising:

calculating an environment noise level (308) of the listener; and

filtering (302) and adjusting gain (314) of the downlink signal based on the environment noise level [Figs. 1-4; col. 6, lines 15-47; col. 10, lines 34-37; col. 15, lines 14-28].

Regarding claim 14, Chandran et al teach an apparatus for improving a downlink signal received by a listener on a phone shown in Fig. 3, comprising:

a noise level calculator (308) that calculates an environment noise level of the listener;

a filter (302) that creates a filtered downlink signal; and

a gain controller (314), coupled to the filter and the noise level calculator, that receives the filtered downlink signal and adjusts gain of the filtered downlink signal based on the environment noise level [Figs. 1-4; col. 6, lines 15-47; col. 10, lines 34-37; col. 15, lines 14-28].

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The above reference is from the Office Action mailed on July 17, 2006, pp. 4-5. Claims 1 and 14 have been canceled and Claim 18 is now dependent on Claim 15. In view of this amendment, this rejection by the Examiner is now moot.

Claims 1, 14 are rejected under 35 U.S.C. § 102(b) as being anticipated by Heitkamper.

Specifically, the Examiner states that:

Regarding claim 1, Heitkamper et al teach a method for improving a downlink signal received by a listener on a phone shown in Fig. 1, comprising

calculating an environment noise level of the listener (i.e. long-term average magnitude of the background noise) [Fig. 1; Section 3: page 457, Equation (3); lines 1-26]; and

filtering (i.e. using first-order recursive filter) and adjusting gain, $g(y_s)$, of the downlink signal based on the environment noise level [Fig. 1; Section 2, page 456, Equation (2), lines 1-24].

Claim 14 is essentially similar to claim 1 and is rejected for the reasons stated above.

The above reference is from the Office Action mailed on July 17, 2006, pp. 5-6. Claims 1 and 14 have been canceled. In view of this amendment, this rejection by the Examiner is now moot.

Claims 1-4, 14 and 18 are rejected under 35 U.S.C. § 102(e) as being anticipated by Trump.

Specifically, the Examiner states that:

Regarding claim 1, Trump et al teach a method for improving a downlink signal received by a listener on a phone, comprising:

calculating an environment noise level of the listener (26) [Fig. 5; Para: 0030-0031]; and
filtering (i.e. filtering used in peak level detector (32)) and adjusting gain of the downlink signal based on the environment noise level [Figs. 3, 5; Para: 0069-0071; 030-0037; 0019].

Regarding claim 14, Trump et al teach the apparatus for improving a downlink signal received by a listener on a phone, comprising:

a noise level calculator (26) that calculates an environment noise level of the listener;
a filter that creates a filtered downlink signal (i.e. filtering used in peak level detector (32)); and
a gain controller (22), coupled to the filter and the noise level calculator (32), that receives the filtered downlink signal and adjusts gain of the filtered downlink signal based on the

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environment noise level [Figs. 3, 5; Para: 0069-0071; 030-0037; 00191.

The above reference is from the Office Action mailed on July 17, 2006, pp. 6-7. Claims 1-4 and 14 have been canceled and Claim 18 is now dependent on Claim 15. In view of this amendment, this rejection by the Examiner is now moot.

Claims 5-6, 16, 19-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Trump as applied to Claim 1, and further in view of Allen. Specifically, the Examiner states that:

Regarding claims 5 and 6, although Trump et al teaches a method of designing a peak level detector (32) [Fig. 5; Appendix 3; Para: 0069-0071], they do not teach expressly the method, wherein filtering the downlink signal comprises subtracting low frequency energy (i.e. using a high-pass filter) from the downlink signal, and filtering the downlink signal comprises adding high frequency energy to the downlink signal.

Allen et al teach an alternative method of designing a peak level detector (22) shown in Fig. 2, wherein filtering the downlink signal comprises subtracting low frequency energy (i.e. removing DC components from the downlink signal using high-pass filter (31)), and further filtering the downlink signal comprises adding high frequency energy to the downlink signal using a low-pass filter (33) based on exponentially mapped past average [Figs. 2-3; col. 5, line 40 to col. 6, line 24].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the method of designing the peak level detector of Allen et al with Trump et al as an alternative method to the method of Trump et al.

The above reference is from the Office Action mailed on July 17, 2006, pp. 8-9. Claims 5-6, 19-20 have been canceled and Claim 16 is now dependent on Claim 15. In view of this amendment, this rejection by the Examiner is now moot.

Claim 17 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Trump as applied to Claim 14, and further in view of Etter. Specifically, the Examiner states that:

Regarding claim 16, Trump et al do not teach expressly using an FIR filter.

Etter teaches using an FIR filter to smooth each master gain value [Para: 0061].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the FIR filter of

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Butter with Trump et al to smooth the gain value, G, of Trump et al [Trump et al; Para: 0061].

The above reference is from the Office Action mailed on July 17, 2006, pp. 9-10. Claim 17 is now dependent on Claim 15. In view of this amendment, this rejection by the Examiner is now moot.

The Examiner has indicated that there is allowable subject matter. Specifically, the Examiner states that:

10. Claims 7-13 are indicated allowable.
11. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter:

Claim 7 identifies the uniquely distinct feature of a method for improving a down link signal received by a listener on a phone, comprising: calculating an environment noise level of the listener; delaying the downlink signal if the environment noise level is less than a first threshold; and filtering and adjusting gain of the downlink signal if the environment noise level is higher than a second threshold. As such, claim 7 requires delaying the downlink signal if the environmental noise level is less than a first threshold; and filtering and adjusting gain of the downlink signal if the environment noise level is higher than a second threshold. Search results indicate that no prior art teaches these limitations. Therefore, claims 7-13 are indicated allowable.

Claim 15 recites the limitations: a delay line, coupled to the gain controller, that creates a delayed downlink signal, wherein the gain controller receives the delayed downlink signal and adjusts gain of the delayed downlink signal based on the environment noise level; and an adder coupled to the gain controller that adds the delayed downlink signal and the filtered downlink signal. As such, claim 15 requires adding the delayed downlink signal and the filtered down link signal. Search results indicate that no prior art teaches these limitations. Therefore, claim 15 is objected to.

The above reference is from the Office Action mailed on July 17, 2006, pp. 10-11, and underlined emphasis was made by the Examiner. The Applicants appreciate the Examiner's indication of allowability of Claims 7-13 and 15. The Applicants respectfully disagree with the Examiner's reasons for indication of allowable subject matter to the extent that they are inconsistent with applicable case law, statutes, and regulations. Furthermore, the Applicants do not admit to any characterization or limitation of the claims or to any characterization of a reference by the Examiner, particularly any that are inconsistent

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with the language of the claims considered in their entirety and including all of their constituent limitations.

Claims 21-31 are added by this Amendment. No new matter was added. Support for new Claims 21-31 and amended FIG. 1 is found in the specification, figures and claims as originally filed.

In view of the arguments set forth herein, it is respectfully submitted that the applicable rejections and objections have been overcome. Accordingly, it is respectfully submitted that Claims 7-11, 15-18, 21-30 should be found in condition for allowance.

If there are any additional charges, please charge them to our Deposit Account Number 500-654.

Respectfully submitted,

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